INTERNET DOCUMENT INFORMATION FORM

A. :Report Title: National Missile Defense

B. DATE Report Downloaded From the Internet _18 Mar 98

C. Report's Point of Contact: (Name, Organization, Address, Office Symbol, & Ph #): The Under Secretary of Defense for Acquisition and Technology

D. Currently Applicable Classification Level: Unclassified

E The foregoing information was compiled and provided by:
DTIC-OCA, Initials:___PM_____**Preparation Date**:18 Mar 98

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Statement of

The Under Secretary of Defense for Acquisition and Technology

Honorable Paul G. Kaminski

Before a Session of the

House Committee on National Security

Subcommittee on Military Research and Development

and

Subcommittee on Military Procurement

on

National Missile Defense

May 15, 1997

Chairmen Weldon and Hunter, members of the subcommittees, and staff, thank you for the opportunity to discuss with you the Department's National Missile Defense (NMD) program.

The proliferation of short-range ballistic missiles in the world today poses a direct, immediate threat to many of our allies and to some U.S. forces deployed abroad in defense of our national interests. Over time, the proliferation of longer range missiles could pose a greater threat to the U.S. itself. For these reasons, an active national missile defense is playing a central and vital role in U.S. defense planning well into the next century.

I would characterize the last three years as a period of transition for our national missile defense program. We are moving from a culture of research, demonstrations and space experiments to one of developing and being prepared to field an operational capability. It takes a different kind of discipline to move from what was essentially an R&D enterprise to being prepared to deploy and support an operational system in the field.

The resource-constrained environment of the nineties, together with the complex nature of the security challenges facing us, requires that we deploy the right capabilities at the right time for achieving the highest overall level of security for the United States. To do so we must consider the role of missile defense within the nation's broader national security strategy. Active defenses can never be considered in and of themselves a panacea for countering the proliferation of ballistic missiles and weapons of mass destruction. We have a broader strategy encompassing a full range of tools in a national "kit" of options. Our strategy has three components: preventing and reducing the threat; deterring the threat; and defending against the threat.

For example, we have adopted the Non-Proliferation Treaty, the Framework Agreement with North Korea, the INF Treaty, the MTCR, and export controls as ways of preventing or reducing the threat to our allies and U.S. forces deployed abroad. The threat to the United States has been reduced significantly through the START treaty, and it will be reduced even further through the START II treaty when Russia ratifies it. Additionally, we have an extensive program for actually dismantling the missiles that had been directed against us in a Cooperative Threat Reduction (CTR) program supported by Nunn-Lugar funds. This is our first line of defense against ballistic missiles and weapons of mass destruction--preventing and reducing that threat.

The second line of defense is deterrence. In the case of the long-range missile threat to the United States, either from land-based intercontinental ballistic missiles (ICBMs) or submarine-launched ballistic missiles (SLBMs), our strategic nuclear forces have been a bulwark of deterrence for nearly a half-century. That will continue. We have smaller numbers of nuclear forces now than we did a decade ago, but they are still very powerful and quite capable of carrying out the strategic deterrence mission.

To the extent that these first two components, reducing the threat and deterring the threat, are not fully successful, we have to be prepared to defend directly against a threat. In the case of the strategic ballistic missile threat to the United States from rogue states, the National Missile Defense program is America's ultimate insurance policy.

THE THREAT

Russia has a significant capability for delivering these weapons with strategic weapon delivery systems--land-based and submarine-launched missiles and long-range aircraft. China can also deliver these weapons with land-based and emerging sea-based ballistic missile capabilities. We do not see these systems as posing a threat to the United States in the foreseeable future. That is, we do not see an intent that goes with the capability. Even should that situation change, we will continue to field a significant U.S. deterrent force.

We do not see a near-term ballistic missile threat to U.S. territory from the so-called rogue nations, but we cannot be complacent about this assessment. The threat of long-range missiles from rogue nations could emerge in the future. The Intelligence Community estimates that would take 15 years to develop, but could be accelerated if those nations acquired this capability from beyond their borders. North Korea is developing a long-range ballistic missile, the Taepo Dong II, which may have sufficient range to strike portions of Alaska and the far western portions of the Hawaiian Islands chain sooner than 15 years. This is why our NMD program is directed towards providing the option to deploy an operational capability, should such a threat emerge, as early as 2003—well ahead of intelligence community estimates. This is also why our counter-proliferation programs are important and why the role of missile defense within this broader national strategy must be carefully integrated into U.S. defense planning.

NATIONAL MISSILE DEFENSE

The primary mission of the NMD program is to develop a capability to defend the United States homeland—the continental US, Hawaii and Alaska—against a limited strategic ballistic missile attack by a rogue nation, should such a threat emerge. In addition, such an NMD system would have some capability against a small accidental or unauthorized launch of a strategic ballistic missile from more nuclear capable states.

In light of the uncertain threat situation, the Department has crafted an NMD strategy over the past two years. The 1995 ballistic missile defense review provided a much needed midcourse update to the 1993 bottom-up review and established the foundation for today's national missile defense program. This review reaffirmed our major missile defenses priorities, identified the need to add near-term funds and management discipline to these programs, and shifted our National Missile Defense program from a technology readiness to a deployment readiness posture.

In recognition of the potential rogue nation threat to U.S. territory, the Department adopted the

"3+3" deployment readiness approach to national missile defense and funding was provided for the first three years of R&D for a national missile defense system. After these initial three years, a deployment option would be available to decision makers should the threat warrant a deployment decision at that time. This approach allows us to respond to a ballistic missile threat to the US as it emerges, and provides the option to respond with the best possible system.

The current program is planned to lead to an integrated system test (IST) in FY 1999 to support a possible deployment decision in FY 2000 and permit deployment of an initial NMD capability by the year 2003. If the threat does not emerge, we will continue to enhance the technology base and commensurate capability, while we retain the ability to deploy a system within three years.

NMD PROGRAM MATURITY

There has been much discussion in recent months about the cost estimates of the "3+3" NMD Program. My sense is that a commensurate amount of attention should be given to the more important question of what are the operational requirements and characteristics for the "3+3" NMD system concept. Before we can define with any precision what the NMD costs are, we should be concerned with defining what "it" is.

Although we have spent a number of years on the technologies of the individual elements of national missile defense, we are still very early in the system acquisition process. While the NMD technologies are maturing, the NMD Program itself is still composed of the multiple concepts common to early acquisition programs. Thus the requirements, designs and resulting cost estimates to date have necessarily been coarse and will be refined as the program proceeds along the acquisition process. Routinely, a major DoD acquisition program begins this with a study period where short term concept studies define the feasibility of alternative approaches and assess their relative merits. At this stage of the program, the most promising concepts are defined in terms of broad objectives for cost, schedule, performance, and overall acquisition and testing strategies.

During this definition period the warfighting community will prepare and submit mission need statements and capstone operational requirements documents. In August 1996, the Joint Requirements Oversight Council (JROC) approved a National Missile Defense Capstone Requirements Document (CRD) specifying the preliminary operational requirements that the NMD system would need to meet. On March 10, 1997, the JROC validated the Key Performance Parameters of a Joint Operational Requirements Document (ORD).

Due to the uncertain nature of the threat, the architectures necessary to respond to the family of potential threats are still under development. At the element level there are still multiple alternatives and technologies in competition. The element "Tool Box" is composed of multiple ground and space based sensors, competing designs for the interceptor kill vehicle, a number of boosters that are still under evaluation, and several BMC3 concepts.

Until this April, BMDO has had a developmental cadre managing the development of the technologies. The delay in standing up the National Missile Defense Joint Program Office can be directly attributed to the Section 8132 provisions of the FY 1997 Defense Appropriations Act that stipulated: (1) the Secretary of Defense shall complete a cost benefit analysis on the establishment of a National Missile Defense Joint Program Office; (2) the Secretary of Defense shall submit a report on this analysis to the congressional defense committees not later than March 31, 1997; and (3) the Department of Defense shall take no action to establish any National Missile Defense Joint Program Office, to reassign service National Missile Defense roles and missions under any National Missile Defense Joint Program Office strategy, or to relocate people under such a strategy prior to March 31, 1997. Although a system integrator will not be selected for several months, the competition to obtain one is underway. On April 25, 1997, a contract was awarded to two prime contractors to compete to be the NMD Lead System Integrator.

This contracting phase is for Program Definition and Risk Reduction, where the options are narrowed to one or more parallel approaches, and prototyping, demonstrations and early operational assessments are used to reduce risk and define cost drivers, and acquisition strategy alternatives. During this period the Joint Requirements Oversight Council will approve an initial Operational Requirements Document which sets the minimum, or threshold, and optimum, or objective, requirements for the final system to meet.

The costs, schedule and required performance levels will be evaluated by the Defense Acquisition Board (DAB) to determine the optimum approach to the program. As the number of options under investigation narrow, the fidelity of the program costs and schedules improve, and at the end of this period the program will have in place cost, schedule and performance baselines and plans to guide the future development. The focus during this early period is to move from multiple top-level concepts, to designs for components, elements and architectures for systems. During this process, engineering data becomes more refined, contractors are selected and identify their vendors, and cost estimates become of greater fidelity.

The winning competitor who will recommend the exact design details of the NMD system will be selected in the Spring of 1998. If the program is assessed by the DoD senior management, through our Defense Acquisition Board process, to be viable, the program will proceed into an engineering and manufacturing development phase, where the most promising design approach is translated from paper into an assembly of hardware and software. During this phase, design reviews and initial component and system level tests will be conducted to assess the produciblity, supportablity, cost-effectiveness of the system design and demonstrate system capabilities of that design to meet requirements. As the program defines specific components and manufacturing requirements, again the cost and schedules are refined and updated.

This is the process that applies to all major DoD programs, and which NMD is following. However, we are early in the program, and there will be changes as we define the program architecture and component designs. It was only last year that NMD became a major defense acquisition program and moved from technology development of elements to the development of a weapon system.

Thus, the NMD development program is at an early stage of maturity. This has led to a situation in which our previous cost estimates were based on rough order-of-magnitude costs grounded in

parametrics, laboratory tests, and simulations. Our cost estimating process was further complicated by delays in the formation of the NMD Program Office, in the awarding of the Lead System Integrator contract and the high risk nature of the program. All things considered, the NMD Program is on track with other early DOD acquisition programs. As the NMD Program matures, the accuracy of our cost estimates will continue to improve.

The recent completion of the System Requirements Document will lead to increasing system definition and stability in the cost estimates. An NMD Joint Program Office was formed two months ago. Future cost estimates, including an Independent Cost Estimate will be much more refined, based on validated Cost Analysis Requirements Document and on the results of integrated system tests which will used to validate element and system performance and validate the simulations. Together, these will provide stability to the cost estimates. The NMD Program is on an aggressive, high risk schedule and moving forward.

QUADRENNIAL DEFENSE REVIEW

The Department considered a wide range of NMD issues during the Quadrennial Defense Review (QDR). These issues included a projected budget shortfall, high program risk, potential deployment options, and whether funds should be programmed for deployment prior to a decision to deploy an NMD system. Decisions were sought on two major issues: What the future NMD readiness program should be, and whether funds should be added to the budget for deployment in advance of a decision to deploy an NMD system.

Several fact-of-life changes have affected our ability to execute the 3+3 program along the timelines the Department previously outlined. Although the 3+3 program approach remains a valid strategy, recent events have highlighted the very high risk associated with the program schedule and raised questions regarding our ability to meet the compressed schedule with currently programmed funds. First, there have been significant management delays. The 7-month delay in establishing the Joint Program Office and the 6-month delay in releasing the Lead System Integrator request for proposals (RFP) have added further to the schedule risk of the program.

Second, a flight-test program failure in January of this year significantly impacted the overall NMD program. We failed to launch the booster carrying the test article—the exo-atmospheric kill vehicle sensor—after the target vehicle had already been launched. The failure investigation showed that the external power supply current limit was incorrectly set resulting in the failure of the battery squib to fire leaving the target booster with no electrical power when the external power was removed prior to launch. Targets are expensive and limited. This failure underscored the need for a more robust target program supporting the development of our ballistic missile defenses. We are assessing schedule and cost options to the program, while planning to reattempt the test by May 31.

Finally, as part of the acquisition review process, the Department has revised its estimates of the costs for the current 3+3 program. It is now estimated that another $2.3 billion may be required across the FY 1998-2003 Future Years Defense Program (FYDP) to maintain the currently defined program and schedule. This estimate still has significant uncertainties that will be refined as the

acquisition process proceeds. But we established during the QDR that the program cannot meet the 3+3 schedule with currently programmed funds.

It is important to understand that we felt the funding programmed for "3+3" NMD program was adequate at the time the FY 1998 President's Budget was prepared. During the QDR, three alternatives were developed to deal with the future of the NMD program. Under the first alternative, no additional funds would be placed in the budget for NMD. The current 3+3 deployment readiness program would slip to a "4+5" program at best and would continue at very high cost, schedule, and technical risk.

Under the second alternative, resources would be added to hold the key milestones in the 3+3 schedule: an integrated system test in FY 1999, decision on deployment in FY 2000, and the R&D to support an initial operational capability (IOC) in FY 2003. While the exact program elements and dollar amount will be determined in the near future, the cost for retaining this schedule may range from $1- to over $2 billion over the FYDP, with approximately 75 percent of that amount being required in FY 1998-2000. The additional resources would reduce the cost risk associated with the program as well some of the technical risk. It would not, however, reduce the very high schedule risk inherent in the 3+3 program.

Under the third alternative, additional funds would be added to the program, and the schedule for the earliest possible deployment would be changed from 2003 to 2006—the date that the Space-Based Infrared System low earth orbit component (SBIRS-Low) would first be available to enhance substantially performance. The development program would be treated like a major acquisition program and would not attempt to support a 2003 IOC, but would proceed based on progress in meeting program milestones. Additional R&D funds, approximately $1.1- to $1.5 billion over the FYDP, would be required for this alternative to provide additional testing and reduction in technical and cost risk.

As a result of the QDR, the Department has decided to maintain the current 3+3 schedule and program (alternative 2 above). While this will require additional R&D resources above the NMD baseline and offsets will have to be found within the DoD topline, we believe it is a prudent hedge against the possibility of a long-range missile threat to the U.S. emerging by 2003 and will result in a more executable program. In the coming months, the Department will refine the cost estimates as the program definition matures.

The second major issue considered was whether DoD should budget for deployment of an NMD system ahead of a decision to deploy a system. The Department has decided not to budget for deployment ahead of a deployment decision. Spending funds in preparation for deployment would involve billions of dollars in the FYDP above the NMD baseline and result in loss of those resources in the event no threat emerges and a system is not deployed. The 3+3 strategy allows time for adding resources to support deployment within three years if such a decision were made. It also allows for additional time to define the NMD system and to better understand the costs associated with deployment.

MAJOR CHALLENGES

Looking ahead, I would say that making our "hit-to-kill" systems work is our number one challenge. We have a lot of "eggs" in this one basket—PAC-3, THAAD, Navy Theater Wide, and NMD are all hit-to-kill systems. I believe we are on the right path with hit-to-kill. In a hit-to-kill intercept, we have both an incoming target and an intercepting kill vehicle traveling at a few miles per second, something about a factor of two faster than what an M-16 bullet would be traveling.

Our analysis shows that we can make a bullet hit a bullet, and we can demonstrate that under ideal conditions. The next step is to move from hitting not occasionally—but to hit routinely under ideal test conditions. Then, we want to hit routinely under stressful operational conditions. Our flight test program is all about working through the technology and integration issues to demonstrate that we can make the hit-to-kill concept work routinely, and that we can do this under stressful simulated wartime conditions. This is the key issue that we are looking at in our PAC-3, THAAD, Navy Theater Wide, and NMD flight test programs.

The recent THAAD flight test failures show how difficult this job can be. If you look at our overall score of attempted hit-to-kill intercept tests on all programs since the early 1980s, it has been six hits out of 20 attempts. Among the four hit-to-kill systems now under development, we have another 43 intercept tests scheduled.

It was not easy the last time we attempted to deploy a ballistic missile defense in the mid-1970s with the SAFEGUARD system. On April 1, 1975, this system achieved initial operational capability with two phased array radars, 30 SPARTAN missiles, and 70 SPRINT missiles. This system became operational only after 111 total flights, 70 of which were intercept tests, and of these, 58 were successful.

Our intention is to push these programs as fast as we can prudently go. I believe we are on this track. A significant issue in our planned development schedules is that we may in fact be constrained by the number of targets we have available to support a very ambitious flight test program. We need to take a closer look into our test target posture as we go forward with this very aggressive program.

In our TMD upper-tier systems we have recently begun a new project that will develop a long range target capability for testing against higher velocity targets. Targets built for lower-tier systems simulate the short range threat and do not provide the longer ranges needed for upper-tier system testing. To meet this need, I have asked BMDO to determine the best solution that is treaty compliant, cost effective, and flexible. BMDO has just completed an

independent review of long range target alternatives. The review recommended an air-launched target that will support testing of both Army and Navy upper-tier systems. BMDO will conduct a study this summer to determine the technical and programmatic feasibility of this concept. In the future, this approach may be used to support NMD target needs.

SPACE BASED INFRARED SYSTEM

The Air Force is continuing development of the Space Based Infrared System low earth orbit component, formerly known as the Space and Missile Tracking System. Once deployed, SBIRS-Low will provide unique "radar-quality" mid-course tracking of ballistic missiles, as well as space objects. This capability will significantly enhance both theater and national missile defense programs, as well as provide additional technical intelligence and theater "battlespace characterization". The combined SBIRS-High and Low architecture provides a robust, multi-mission system serving both theater commanders and the intelligence community.

The SBIRS-Low program was carefully reviewed by a Quadrennial Defense Review task force which determined, that while critical for national missile defense, SBIRS-Low also brings new capabilities to other mission areas. It can potentially serve as an integrated part of long-range theater missile defenses, not just an external cueing system. Much of the space surveillance mission can also be performed by SBIRS-Low, allowing closure of terrestrial space track sites and eliminating some of our current coverage "gaps." We are continuing to investigate additional applications in a series of follow-on studies. For these reasons, the QDR supported full-funding for SBIRS-Low deployment as an NMD-linked, but not necessarily NMD-dependent, system.

The current phase of the SBIRS-Low program consists of two competing "proof-of-concept" satellite programs. Both programs will launch in late FY 1999. SBIRS-Low represents an advanced application of several technologies, packaged in small satellites operating in a distributed architecture. This is a fundamentally new type of space system for DoD. The risk-reduction satellites will greatly smooth the transition to a fully operational system. We added $509 million to the FY 1998 FYDP to accelerate deployment of SBIRS-Low from FY 2006 to FY 2004. This is an aggressive but technically prudent step supported by a Defense Science Board and GAO reviews of the program.

ARMS CONTROL

The ABM Treaty sets out certain constraints on ABM systems and their components, so it obviously will have to be taken into account in our NMD program. Although the Treaty bans development, testing, and deployment of mobile ABM systems and components, it allows testing of fixed, land-based ABM systems and their components, and it allows limited deployment of such systems and components. More than a year ago, Secretary Perry articulated the ABM Treaty compliance policy that guides our NMD program: NMD development and testing will comply with the existing ABM Treaty; the NMD system that we would deploy will be designed to counter the threat as we see it and might require Treaty modification. We do not anticipate that Treaty restraints will adversely affect NMD development and testing. A deployed system, which will respond to the nature of an emerging threat, could require modification to the Treaty. Thus, we do not expect the ABM Treaty to undercut the ability of the NMD program to meet its requirements.

SUMMARY

The Department is committed to protecting the United States, including U.S. forces deployed abroad, and our allies against ballistic missile, and weapons of mass destruction threats. We have a comprehensive national security strategy for countering such threats, including preventing and reducing the threat; deterring the threat; and defending against it. Active defense against ballistic missile attack is an important component of that strategy.

Our BMD priorities are reflected in the President's budget, which includes $12.5 billion across fiscal years 1998 through 2003. Our first priority, Theater Missile Defense, deals with the threat that exists today. The second priority is National Missile Defense. And the third priority is to support the underlying technology base.

I believe the program proposed by the Department responds to the threats and to the priorities expressed by the Joint Staff. Our NMD program is making progress in establishing a deployment readiness posture. The development portion of the program will comply with the Anti-Ballistic Missile Treaty and is planned to enable the United States to develop by 2000, elements of an initial NMD system that could be deployed by 2003. This approach would preserve thereafter a capability to deploy within three years, while allowing the United States to continue the advancement of technology, add new elements to the system, and potentially reduce deployment timelines.

The NMD system would have the primary purpose of defending against limited rogue threats and would have some capability against small accidental/unauthorized launches. It would not be capable of defending against a heavy deliberate attack. The NMD solution will be a defense-wide solution. To implement this strategy, lead system integrator contracts have been awarded and an NMD Joint Program Office has been established.

Chairmen Weldon and Hunter, thank you for this opportunity to appear before the subcommittees. I shall be happy to answer any questions you may have.